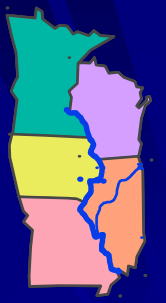


# Planning Community of Practice Conference

## Upper Mississippi River Restoration - Environmental Management Program (EMP) - 20 Years of Collaboration, Monitoring and Restoration

May 20, 2008
San Antonio, TX

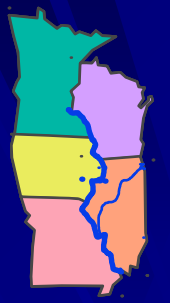
By


Roger A. Perk, P.E.

Roger.A.Perk@USACE.Army.Mil

**http://www.mvr.usace.army.mil/EMP**

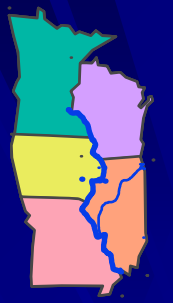

*One Team: Relevant, Ready, Responsive and Reliable*

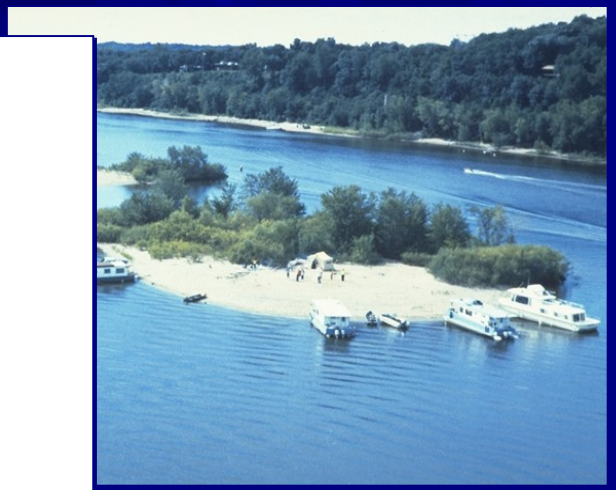


The EMP is…

*One Team: Relevant, Ready, Responsive and Reliable*

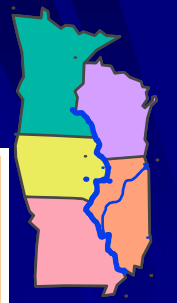
# Upper Mississippi River System

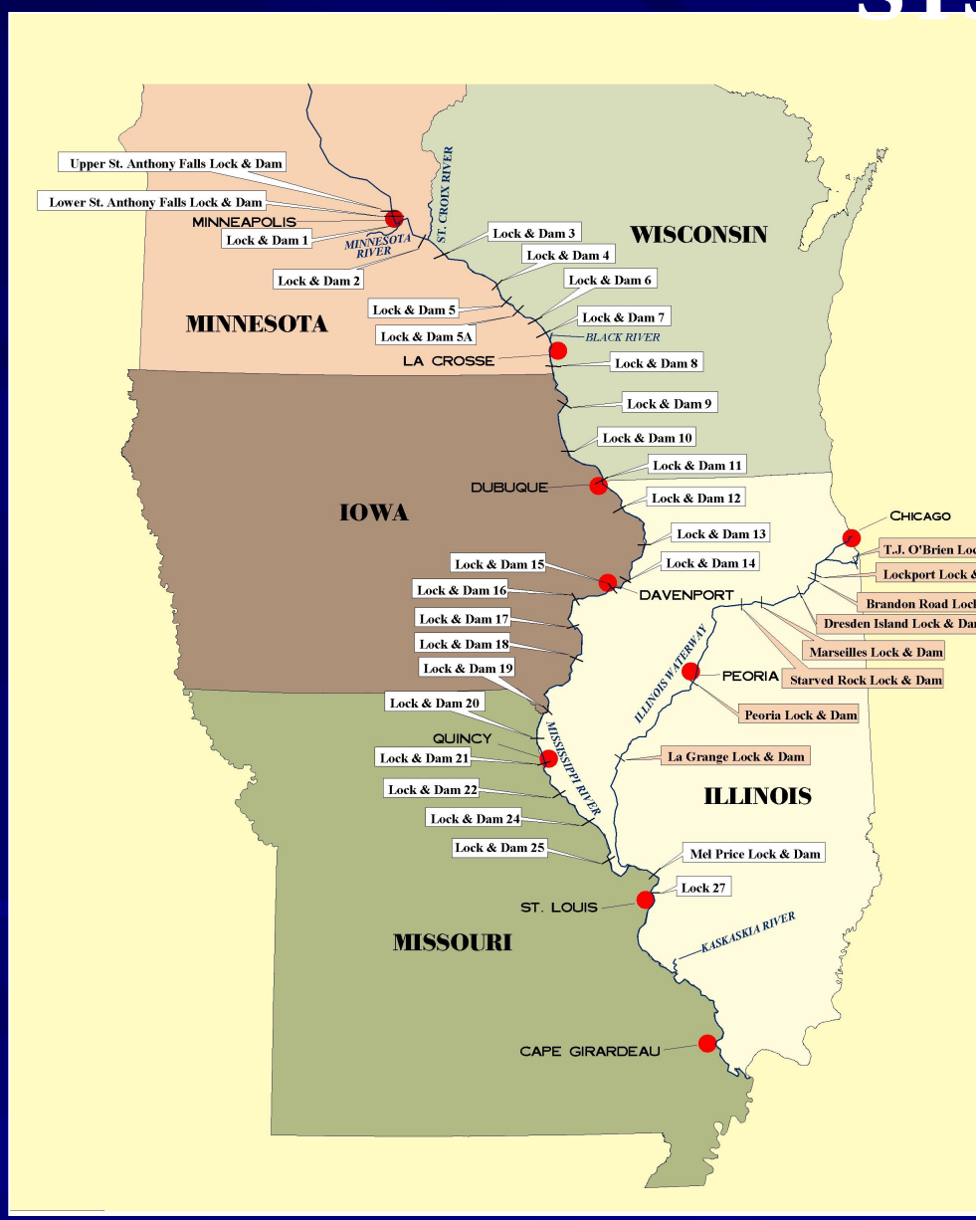




*One Team: Relevant, Ready, Responsive and Reliable*

# UMR-IWW NAVIGATION SYSTEM

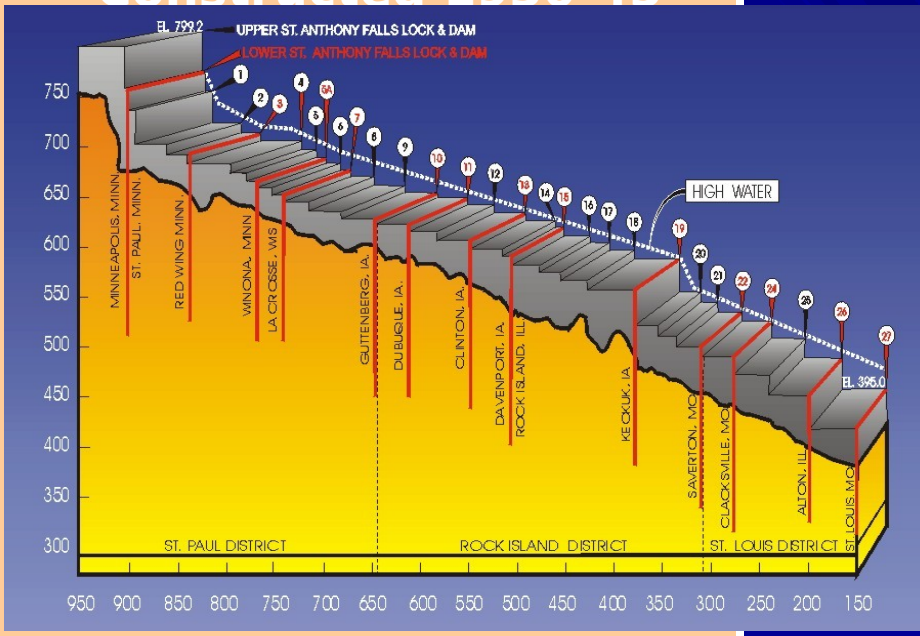




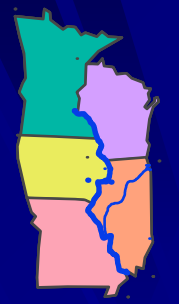

- **Significant Ecosystem**

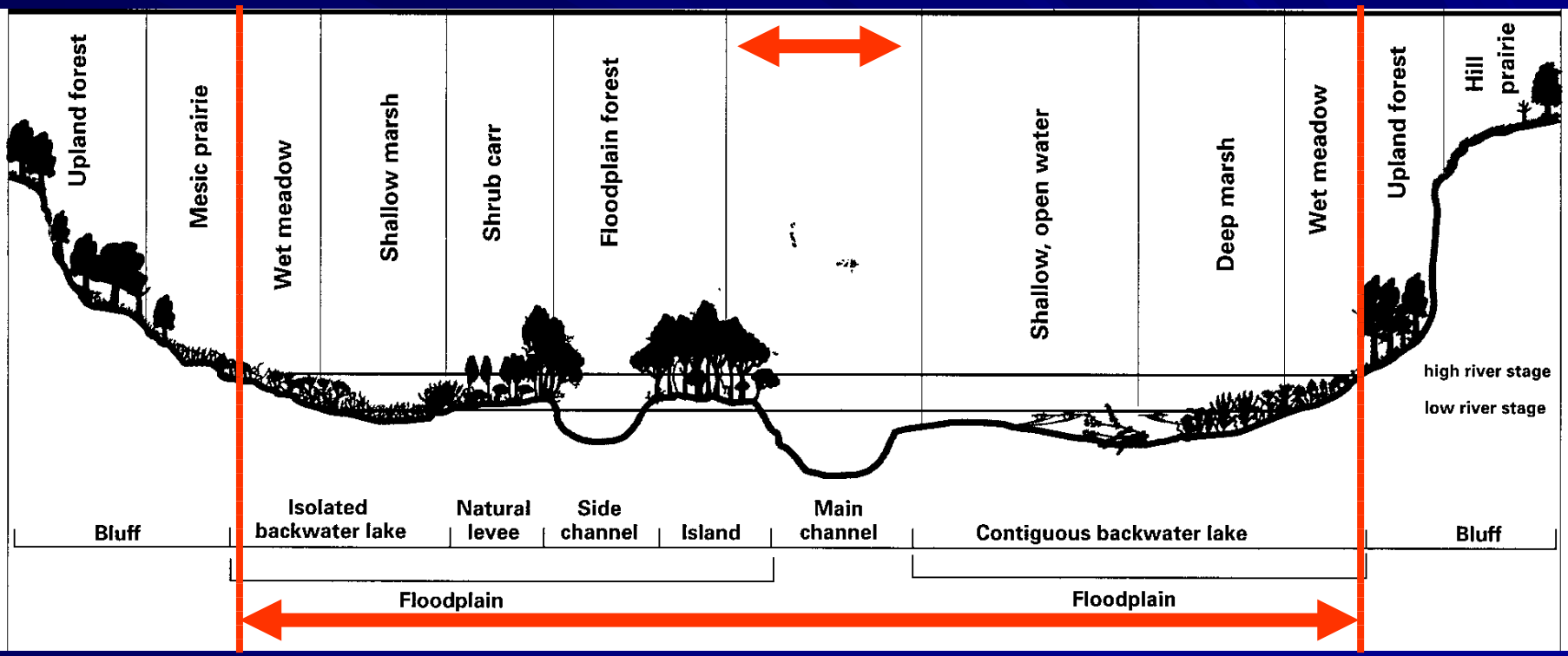
  **(2.7 million acres)**

- **30 Million People**
- **1,200 Miles of River**
- **37 Lock Sites Constructed 1930-45**



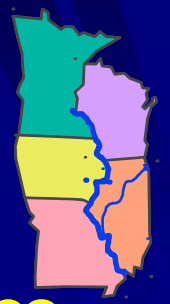
# BOUNDARIES






## ECOSYSTEM STUDY AREA (2.7 million acres)

# National Significance of Upper Mississippi River System



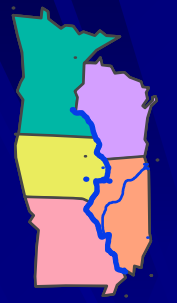
**Only River in the United States to be formally recognized by Congress "… as a nationally significant ecosystem and a nationally significant commercial navigation system. … shall be administered and regulated in recognition of its several purposes."**

**Citation: Water Resources Development Act of 1986, Section 1103(a)(2).**

# Nationally Significant Ecosystem

- Over 226,000 acres of National Fish and Wildlife Refuge land.
- 260 (25%) species of N. America's fish
- Provides food and habitat for hundreds of species of birds, mammals, amphibians, reptiles, plants, macro-invertebrates and fish.
- $2 billion in recreational activity

# FEDERAL-STATE PARTNERSHIP



USGS
science for a changing world

US Army Corps of Engineers®

U.S. FISH & WILDLIFE SERVICE
DEPARTMENT OF THE INTERIOR

UMRS-EMP

Minnesota
DEPARTMENT OF NATURAL RESOURCES

WISCONSIN
DEPT. OF NATURAL RESOURCES

DNR

Illinois Department of Natural Resources

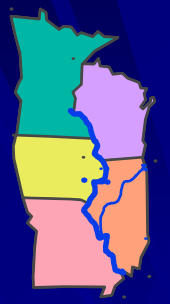
CONSERVATION DEPARTMENT
MISSOURI

*One Team: Relevant, Ready, Responsive and Reliable*

# 20th Anniversary

*One Team: Relevant, Ready, Responsive and Reliable*

# National and World Significance



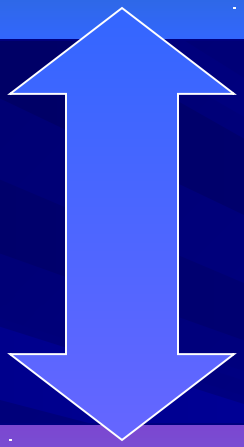
- First comprehensive large river ecosystem restoration program in nation and world!
- First comprehensive large river monitoring program in nation and world!

# The EMP is…

## INFORMATION

**Monitoring & Analysis**

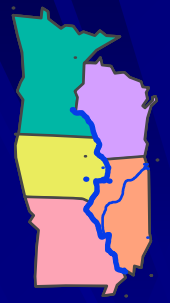
***LTRMP***



## ACTION

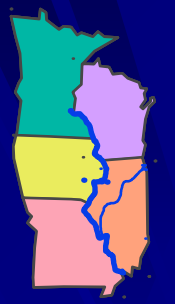
**Habitat Protection & Restoration**

***HREP***



*One Team: Relevant, Ready, Responsive and Reliable*

# Monitoring GOALS



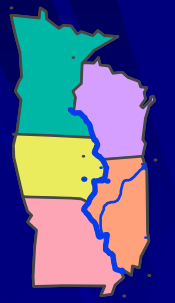
A better understanding of the ecology and its resource problems.

Tracking resource changes.

Develop alternatives to better manage the river.

Provide for the proper management of monitoring information.

# Habitat Rehabilitation and Enhancement Projects

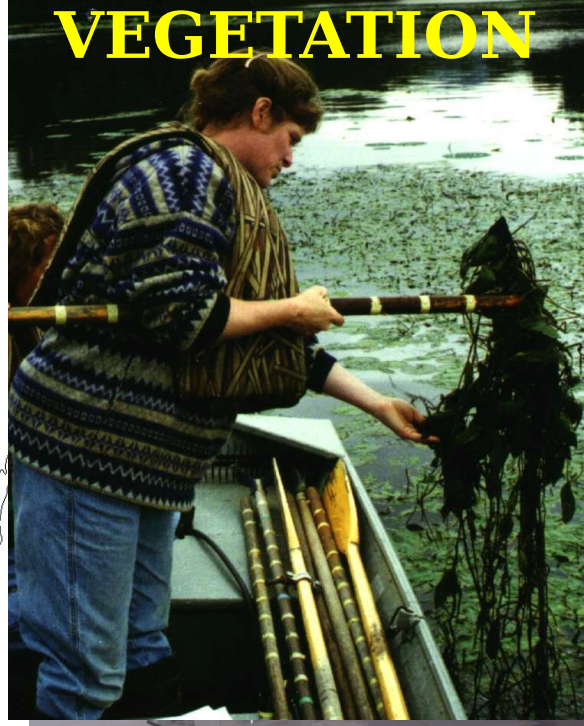


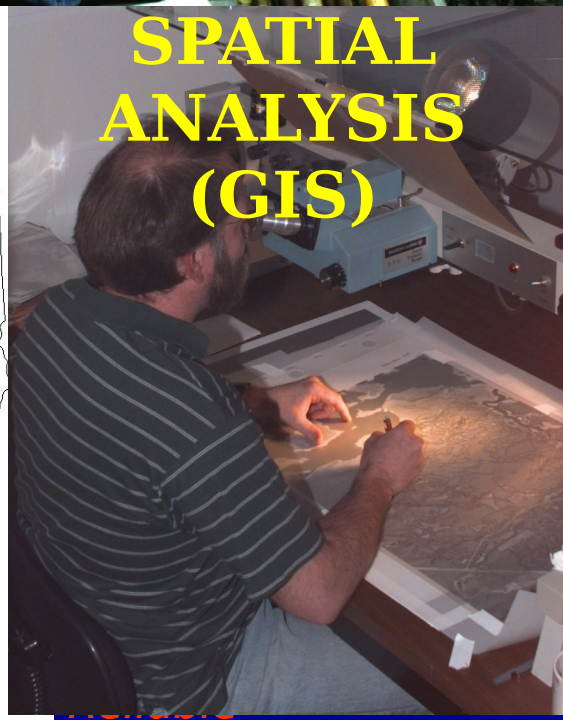
- Increase habitat diversity for wildlife and fish
- Provide off-channel resting and spawning habitat for fish
- Provide reliable floodplain wetlands and associated food resources
- Create shelter zones and nesting sites for birds
- Increase quality and amount of bottomland hardwoods

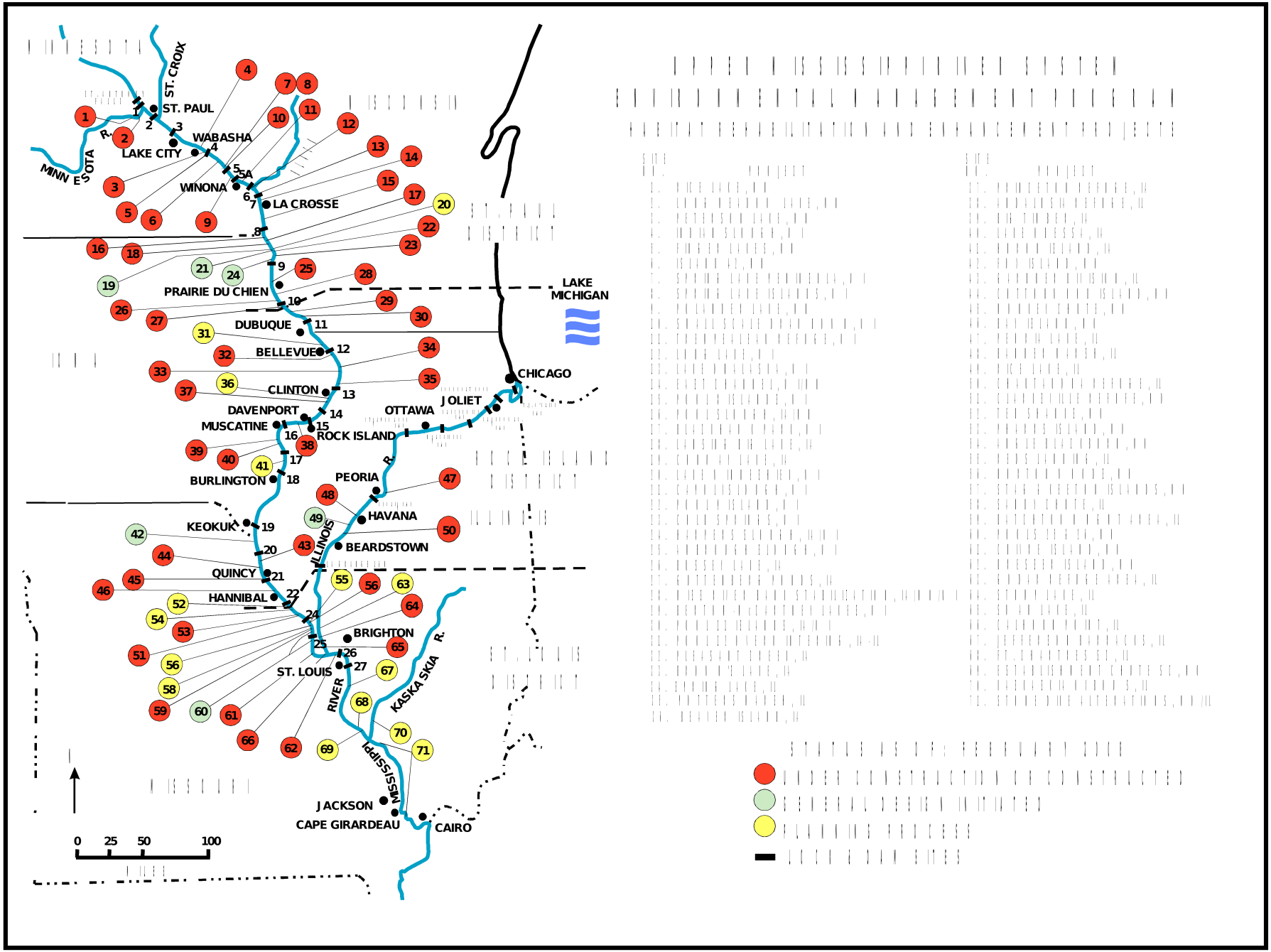
WATER QUALITY

FISHERIES

Minnesota
Wisconsin
Lake City
Field Station
Onalaska
Field Station
Iowa
Bellevue
Field Station
Mississippi River
Illinois River
Havana
Field Station
Missouri
Missouri
River
Great Rivers
Field Station
Illinois
Open River
Field Station


VEGETATION


SPATIAL
ANALYSIS
(GIS)


ST. CROIX
R.
MINNESOTA
ST. PAUL
WABASHA
LAKE CITY
WINONA
LA CROSSE
PRAIRIE DU CHIEN
DUBUQUE
BELLEVUE
CLINTON
DAVENPORT
MUSCATINE
ROCK ISLAND
BURLINGTON
KEOKUK
QUINCY
HANNIBAL
ILLINOIS
R.
PEORIA
HAVANA
BEARDSTOWN
BRIGHTON
ST. LOUIS
RIVER
KASKASKIA
R.
MISSISSIPPI
JACKSON
CAPE GIRARDEAU
CAIRO
OTTAWA
JOLIET
CHICAGO
LAKE
MICHIGAN
0
25
50
100

# HREP SUMMARY 1988 - 2008

***50 projects nearly complete or completed***

**83,000 acres of habitat**

***6 projects under construction***

**11,500+ acres of habitat**

***20 projects in design***

**43,000+ acres of habitat**

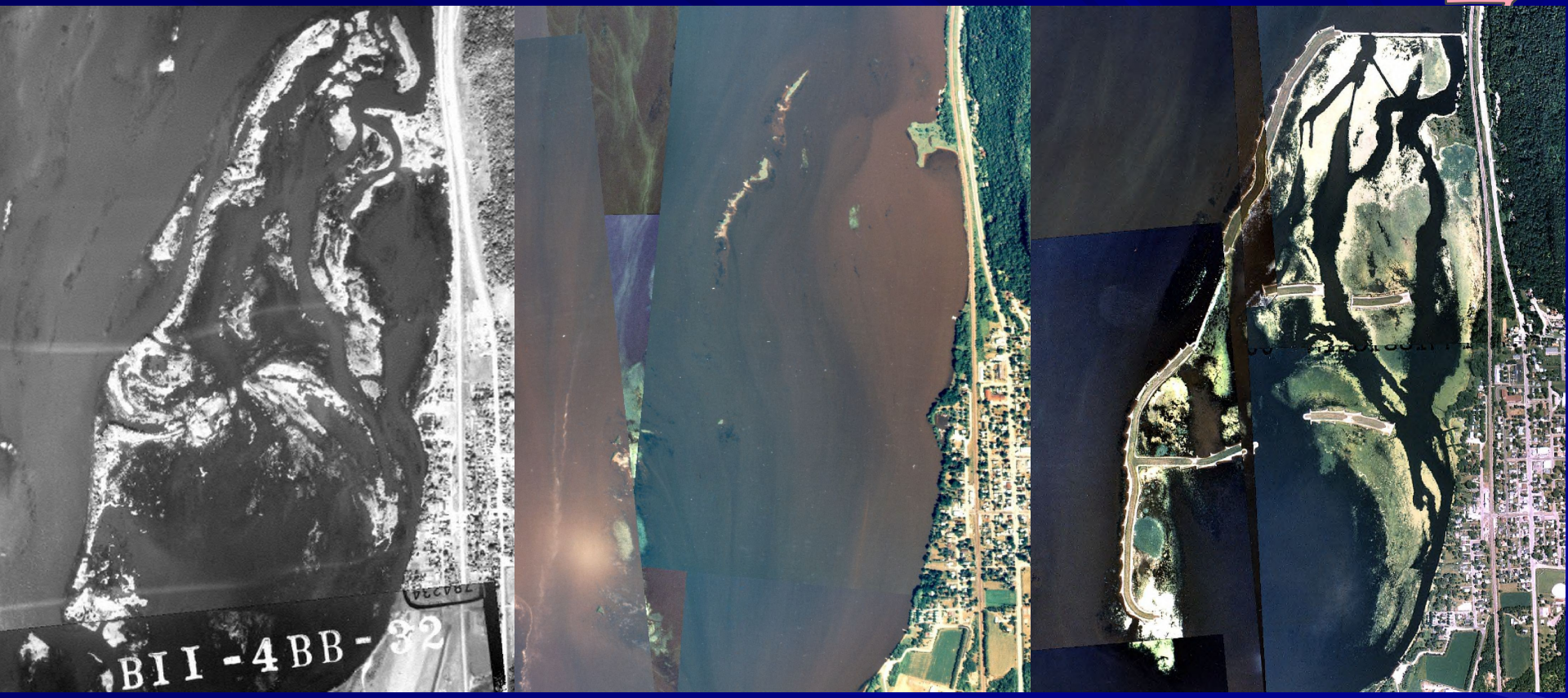
**74 Projects Total Acres:**

**135,000+**

**Per project range of investment: $56,000 - $13 million+** (majority of projects completed to date: $1-4 million range)

# Island Protection and Restoration

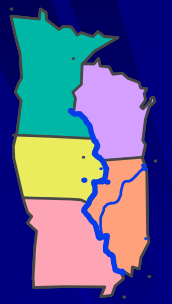
## Pool 8 Islands HREP Phase II, near Stoddard, Wisconsin




October 1961 August 1994 August 2000

*One Team: Relevant, Ready, Responsive and Reliable*

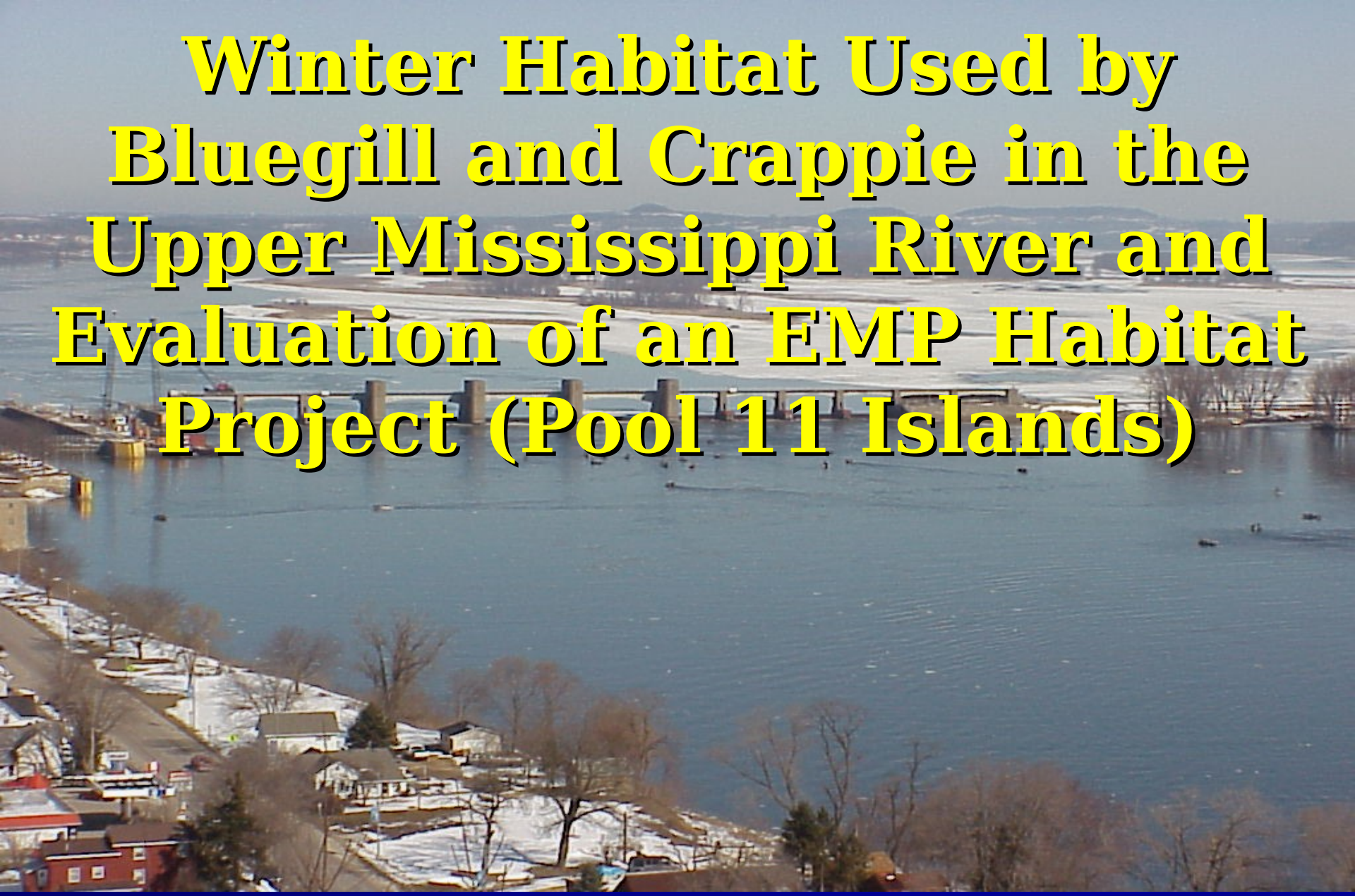
# Success Is Based Upon:



- Common Purpose
- Building Trust and Respect
- Diversity of Ideas
- Diversity of Expertise
- “Contributed” Manpower

(Example following)

# Winter Habitat Used by Bluegill and Crappie in the Upper Mississippi River and Evaluation of an EMP Habitat Project (Pool 11 Islands)



**Mike Steuck, Iowa DNR Fisheries**

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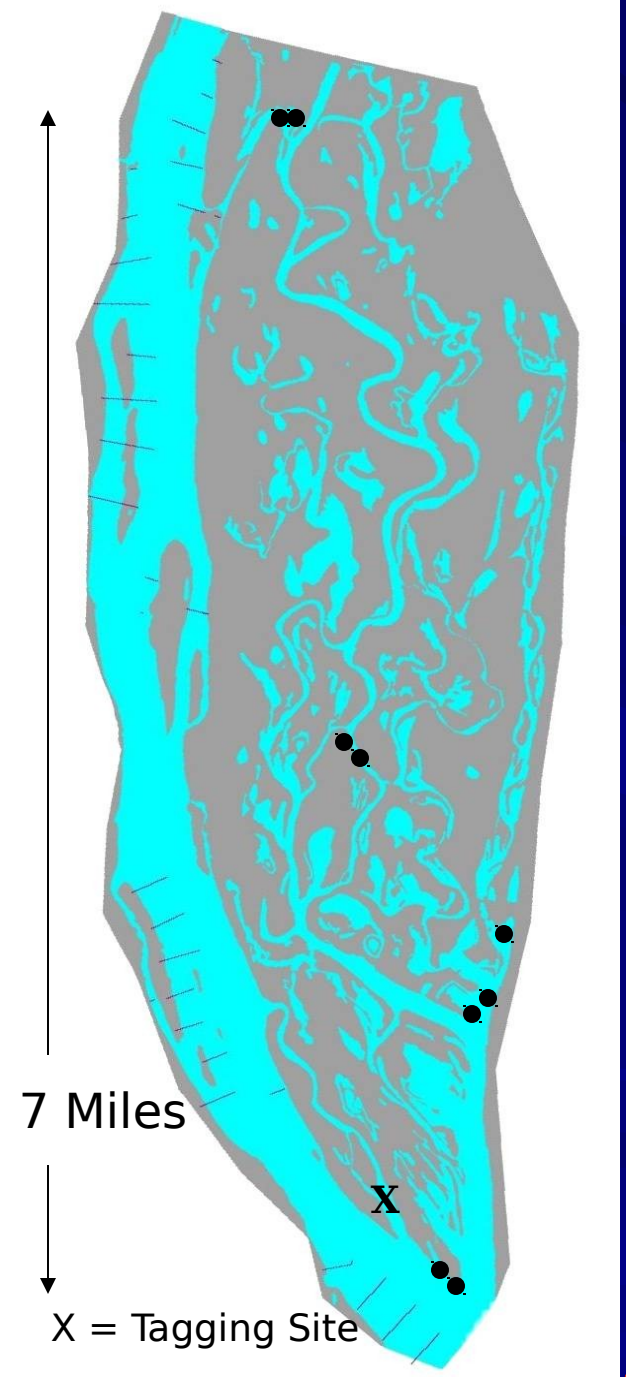
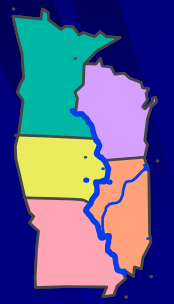
151

9.961

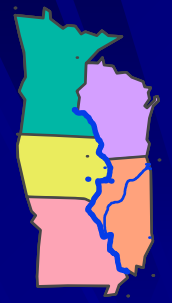



# Black Crappie
# 49.661



m: Be Alert, Ready, Respond and Recover

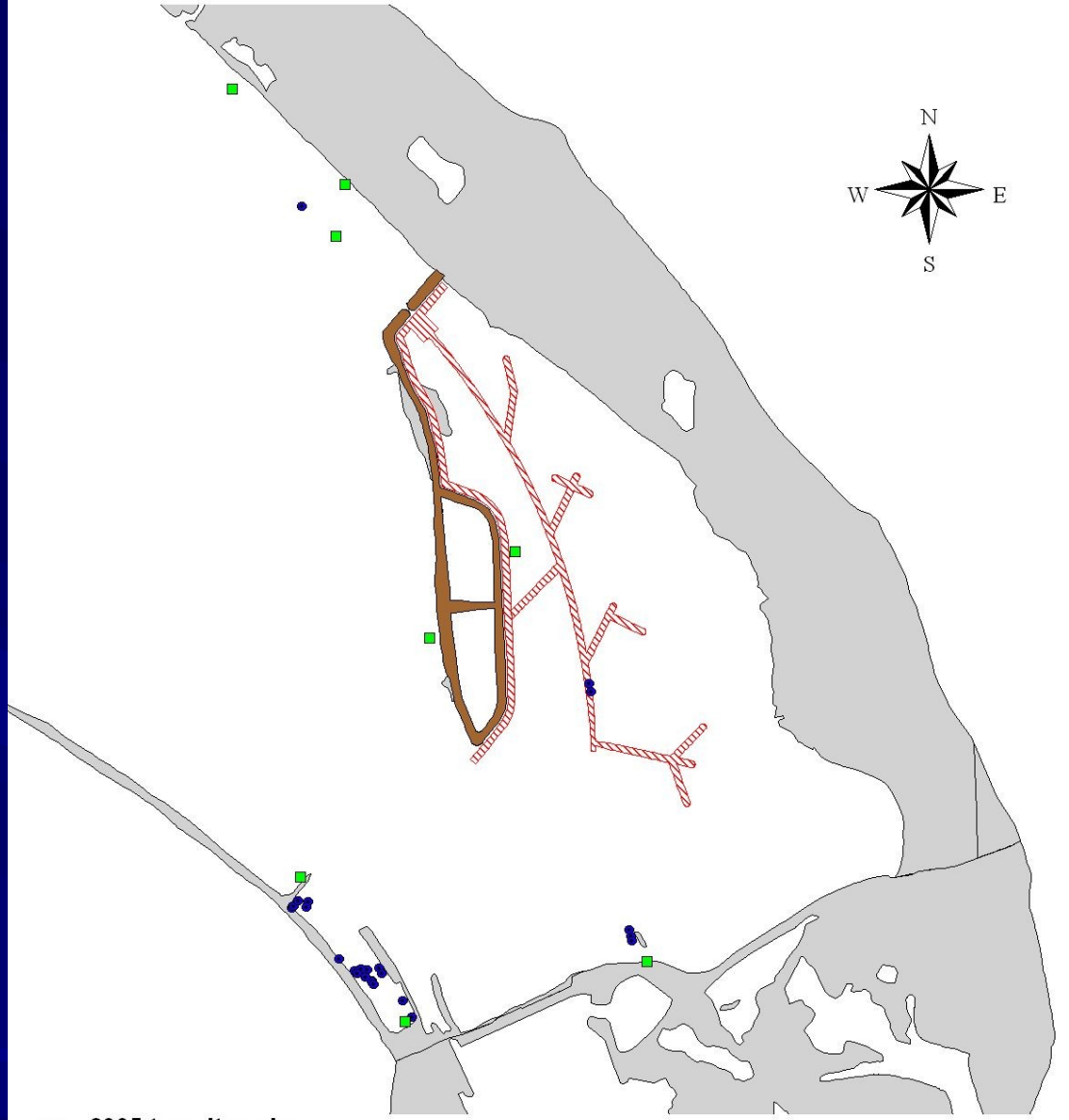
Sunfish Lake, Pool 11
Aug. 1994

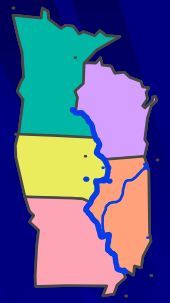


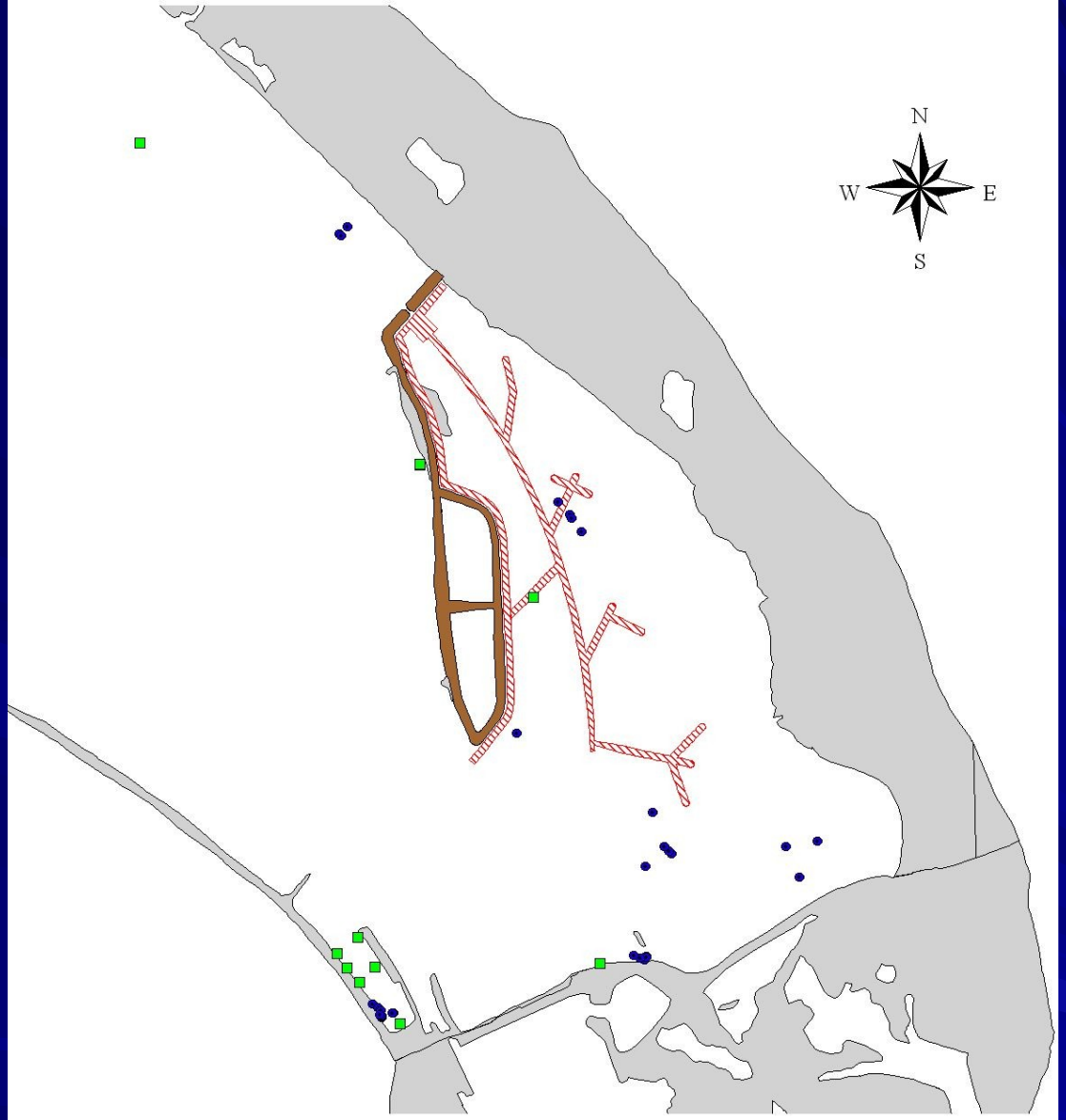
Sunfish Lake, Pool 11
Sept. 2006

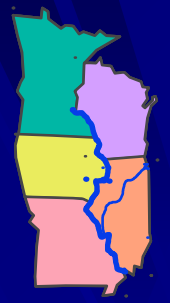
DNR

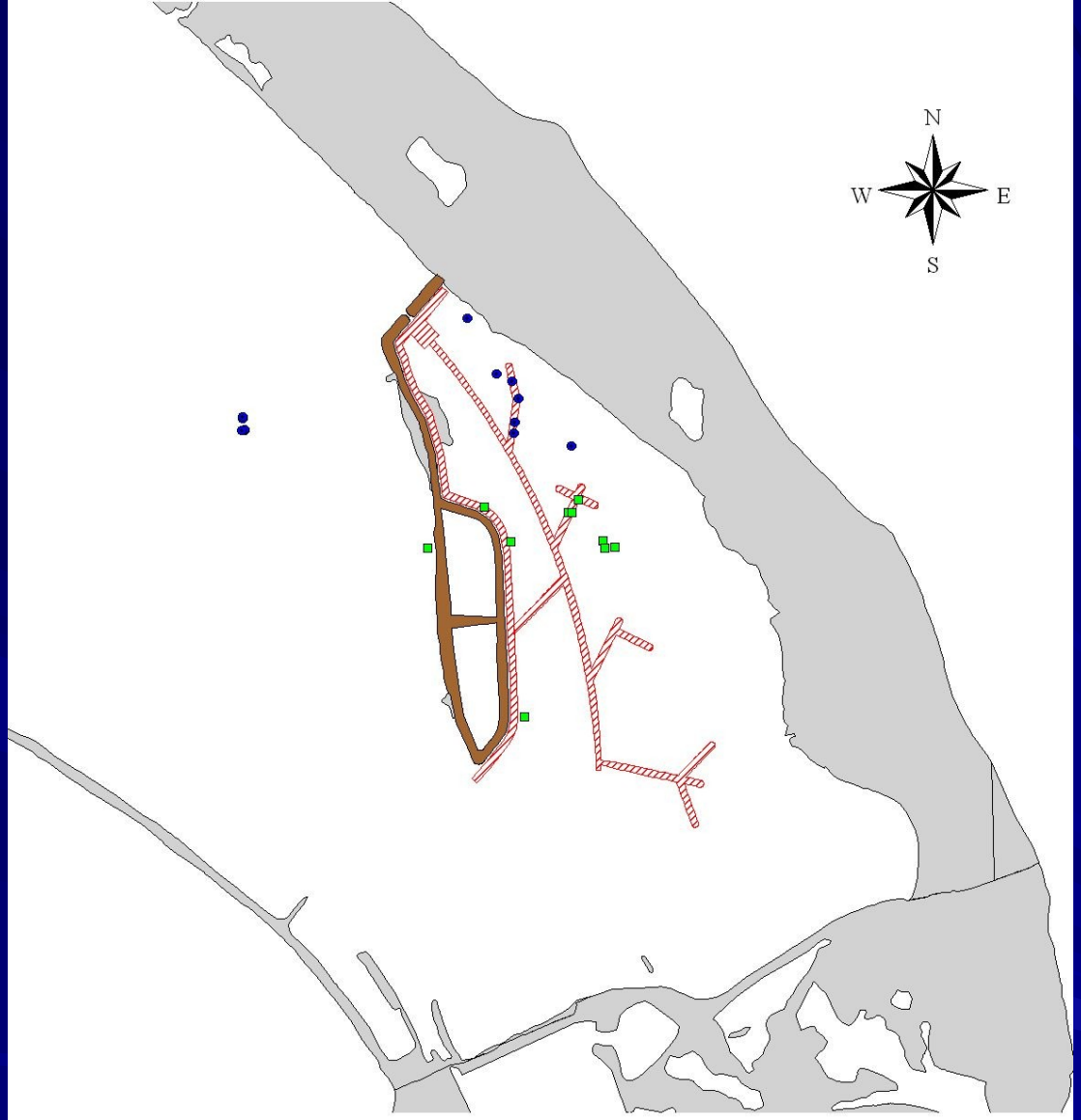
One Tea

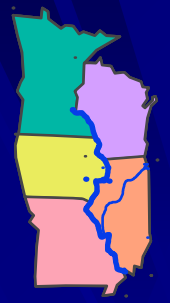

N
W
E
S
2005 tag sites.shp
05-06 nov thru feb locs.shp
Sunfish and mud lake features.shp
Dredge Cut
Island
Lw_2000_p11_z15n27.shp
Land
Water
0
0.5
1 Miles




N
W
E
S
Tag dates 06-07.shp
06-07 nov thru feb locs.shp
Sunfish and mud lake features.shp
Dredge Cut
Island
Lw_2000_p11_z15n27.shp
Land
Water
0
1 Miles




N
W
E
S
All other locs 2007-2008.shp
Tagging locs 2007-2008.shp
Sunfish and mud lake features.shp
Dredge Cut
Island
Lw_2000_p11_z15n27.shp
Land
Water
0
0.5
1 Miles



ble

# Mud Lake Pool 11 July

*One Team: Relevant, Ready, Responsive and Reliable*

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Marvin.E.Hubbell@USACE.Army.Mil

http://www.mvr.usace.army.mil/EMP

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